

IN THE CLAIMS:

Please cancel claim 1 without prejudice.

Please amend claims 2-6, 8, 14, 16, and 20, and add new claim 25 as follows:

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2. (Amended) The method as defined in claim 4, further comprising the step of repeating the calculating, generating, and using steps for each pixel in the scaled destination image.
3. (Amended) The method as defined in claim 5, further comprising the step of:
storing all available convolution kernels in a memory,
wherein in the generating step, one of the stored convolution kernels is selected based on the calculated local context metric.
4. (Amended) A method for scaling a source image to produce a scaled destination image, said method comprising the steps of:
calculating a local context metric from a local portion of the source image;
generating a convolution kernel from a plurality of available convolution kernels based on the calculated local context metric;
using the generated convolution kernel to generate at least one pixel of the scaled destination image, the scaled destination image having a different resolution than the source image; and
storing at least two convolution kernels in a memory,
wherein in the generating step, either one of the stored convolution kernels is selected or another convolution kernel is generated by interpolating the stored convolution kernels.

5. (Amended) A method for scaling a source image to produce a scaled destination image, said method comprising the steps of:

calculating a local context metric from a local portion of the source image;

generating a convolution kernel from a plurality of available convolution kernels based on the calculated local context metric; and

using the generated convolution kernel to generate at least one pixel of the scaled destination image, the scaled destination image having a different resolution than the source image,

wherein the available convolution kernels include at least one smoothing kernel and at least one sharpening kernel.

6. (Amended) The method as defined in claim 5, wherein the local context metric has more than two possible values.

8. (Amended) A machine-readable medium encoded with a program for scaling a source image to produce a scaled destination image, said program containing instructions for performing the steps of:

calculating a local context metric from a local portion of the source image;

generating a convolution kernel from a plurality of available convolution kernels based on the calculated local context metric; and

using the generated convolution kernel to generate at least one pixel of the scaled destination image, the scaled destination image having a different resolution than the source image,

wherein the available convolution kernels include at least one smoothing kernel and at least one sharpening kernel.

14. (Amended) An image scaling device that receives pixels of a source image and outputs pixels of a scaled destination image, said image scaling device comprising:

a context sensor for calculating a local context metric based on local source image pixels;
a kernel generator coupled to the context sensor, the kernel generator generating a current convolution kernel from a plurality of available convolution kernels based on the local context metric calculated by the context sensor; and

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a scaler coupled to the kernel generator, the scaler receiving the coefficients of the current convolution kernel from the kernel generator, and using the coefficients to generate at least one pixel of the scaled destination image from pixels of the source image, the scaled destination image having a different resolution than the source image,

wherein the available convolution kernels include at least one smoothing kernel and at least one sharpening kernel.

16. (Amended) An image scaling device that receives pixels of a source image and outputs pixels of a scaled destination image, said image scaling device comprising:

a context sensor for calculating a local context metric based on local source image pixels;
a kernel generator coupled to the context sensor, the kernel generator generating a current convolution kernel from a plurality of available convolution kernels based on the local context metric calculated by the context sensor; and

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a scaler coupled to the kernel generator, the scaler receiving the coefficients of the current convolution kernel from the kernel generator, and using the coefficients to generate at least one pixel of the scaled destination image from pixels of the source image, the scaled destination image having a different resolution than the source image,

wherein the kernel generator stores all available convolution kernels, and
the kernel generator selects one of the stored convolution kernels as the current convolution kernel based on the calculated local context metric.

20. (Amended) A display device that receives source image pixels and displays a scaled destination image, said display device comprising:

a context sensor for calculating a local context metric based on local source image pixels;

a kernel generator coupled to the context sensor, the kernel generator generating a current convolution kernel from a plurality of available convolution kernels based on the local context metric calculated by the context sensor;

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a scaler coupled to the kernel generator, the scaler receiving the coefficients of the current convolution kernel from the kernel generator, the scaler using the coefficients to generate at least one pixel of the scaled destination image from pixels of the source image, the scaled destination image having a different resolution than the source image; and

a display for displaying the scaled destination image,

wherein the available convolution kernels include at least one smoothing kernel and at least one sharpening kernel.

Please add new claim 25 as follows:

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--25. (New) The display device as defined in claim 20, wherein the available convolution kernels include a complete smoothing kernel, a complete sharpening kernel, and a plurality of other kernels that provide a transition between the complete sharpening kernel and the complete smoothing kernel.--